SAMSUNG

SIR-T165

DIGITAL TV SET TOP BOX

Owner's Instructions

SAMSUNG ELECTRONICS

Samsung Electronics America inc.

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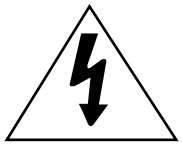
MD68-00278A(ENG)

Warning! Important Safety Instructions

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates high voltage is present inside. It is dangerous to make any kind of contact with any inside part of this product.

This symbol alerts you that important literature concerning operation and maintenance has been included with this product.

Note to CATV system installer: This reminder is provided to call CATV system installer's attention to Article 820-40 of the National Electrical Code (Section 54 of Canadian Electrical Code, Part I), that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

Caution: FCC regulations state that any unauthorized changes or modifications to this equipment may void the user's authority to operate it.

Caution: To prevent electric shock, match the wide blade of plug to the wide slot, and fully insert the plug.

Attention: pour eviter les chocs electriques, introduire la lame le plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

Important: One Federal Court has held that unauthorized recording of copyrighted TV programs is an infringement of U.S. copyright laws. Certain Canadian programs may also be copyrighted and any unauthorized recording in whole or in part may be in violation of these rights.

Warning-To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

Thank You for Choosing Samsung

Thank you for choosing Samsung! Your new Samsung Digital TV receiver represents the latest in DTV IRD technology. We designed it with easy-to-use on-screen menus and closed captioning capabilities, making it one of the best products in its class. We are proud to offer you a product that will provide convenient, dependable service and enjoyment for years to come.

Important Safety Information

Always be careful when using your product. To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind when installing, using, and maintaining your machine.

- Read all safety and operating instructions before operating your product.
- Keep the safety and operating instructions for future reference.
- Heed all warnings on the product receiver and in the operating instructions.
- Follow all operating and use instructions.
- Unplug the product from the wall outlet before cleaning. Use a damp cloth; do not use liquid or aerosol cleaners.
- Never add any attachments and/or equipment without approval of the manufacturer. Such additions can increase the risk of fire, electric shock, or other personal injury.
- Do not use the product where contact with or immersion in water is a possibility, such as near bath tubs, sinks, washing machines, swimming pools, etc.
- Do not place the product on an unstable cart, stand, tripod, bracket, or table where it can fall. A falling product can cause serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Follow the manufacturer's instructions when mounting the unit, and use a mounting accessory recommended by the manufacturer. Move the product and cart with care. Quick stops, excessive force, and uneven surfaces can make the unit and cart unsteady and likely to overturn.

- Provide ventilation for the product. The unit is designed with slots in the cabinet for ventilation to protect it from overheating. Do not block these openings with any object, and do not place the product on a bed, sofa, rug, or other similar surface. Do not place it near a radiator or heat register. If you place the product on a rack or bookcase, ensure that there is adequate ventilation and that you've followed the manufacturer's instructions for mounting.
- Operate your product only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your appliance dealer or local power company.
- Use only a grounded or polarized outlet. For your safety, this product is equipped with a polarized alternating current line plug having one blade wider than the other. This plug will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still does not fit, contact your electrician to replace your outlet.

- Protect the power cord. Power supply cords should be routed so that they won't be walked on or pinched by objects placed on or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

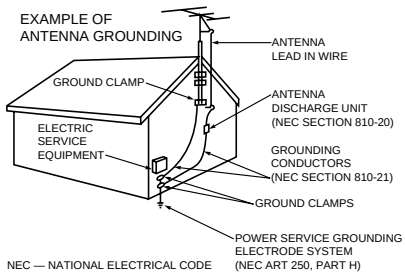
- Unplug the product from the wall outlet and disconnect the antenna or cable system during a lightning storm or when left unattended and unused for long periods of time. This will prevent damage to the unit due to lightning and power-line surges.

- Avoid overhead power lines. An outside antenna system should not be placed in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outside antenna system, be extremely careful to keep from touching the power lines or circuits. Contact with such lines can be fatal.

- Do not overload the wall outlet or extension cords. Overloading can result in fire or electric shock.

- Do not insert anything through the openings in the unit, where they can touch dangerous voltage points or damage parts. Never spill liquid of any kind on the product.

- Ground outdoor antennas. If an outside antenna is connected to the product, be sure the antenna is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No.70-1984, provides information about proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



- Do not attempt to service the product yourself. Refer all servicing to qualified service personnel. Unplug the unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - when the power-supply cord or plug is damaged
  - if liquid has been spilled on the unit or if objects have fallen into the unit
  - if the product has been exposed to rain or water
  - if the product does not operate normally by following the operating instructions
  - if the product has been dropped or the cabinet has been damaged
  - when the product exhibits a distinct change in performance
- If you make adjustments yourself, adjust only those controls that are covered by the operating instructions. Adjusting other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal.

- When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part. Unauthorized substitutions may result in additional damage to the unit.

- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in a safe operating condition.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference that may cause undesired operation.

This television receiver provides display of television closed captioning in accordance with §15.119 of the FCC rules.

A Guide to Digital TV

What is Digital Television?

Digital television (DTV) is a new way of transmitting high quality video and audio to your TV set. Using DTV, broadcasters can transmit high definition TV (HDTV) images, Dolby digital surround audio, and new services such as multicasting (transmitting more than one program on the same TV channel) and datacasting (providing electronic program guides and interactive television). Several of these services can be combined into a single digital broadcast.

Digital Television Services

Digital Picture Quality

DTV programs are transmitted in two different formats. The first is Standard Definition Television (SDTV) and the second is High Definition Television (HDTV).

SDTV program formats include 480-line interlaced (480i) and 480-line progressive (480p) video. 480i programs are essentially a digital version of our current analog TV programs, while the 480p format offers improved image detail over 480i. Some 480p programs are broadcast in widescreen and are comparable to progressive-scan DVD movies in image quality.

HDTV program formats include 1080-line interlaced (1080i) and 720-line progressive (720p). Both HDTV formats are always broadcast in widescreen, and both offer much higher picture quality than SDTV.

Dolby Surround Sound

With DTV, you can listen to a variety of Dolby digital audio formats from Dolby Surround 2.0 to Dolby Digital 5.1 surround, using your home audio system. Many HDTV programs are now broadcast with DD 5.1 soundtracks.

Interactive Communications and Datacasting

DTV will allow you to interact with your television; choosing programs from a detailed program guide, ordering products on-line while watching TV, and accessing ancillary data about a program.

How to View Digital Television

There are three ways to watch DTV. The first is to use an integrated digital TV; one with a built-in digital television tuner. The second is to connect an external DTV set-top receiver to a DTV-ready television or monitor. This type of TV or monitor will have wideband component video and stereo audio inputs. You can also watch DTV signals with personal computer (PC) tuner cards and computer monitors.

1. Integrated TVs versus DTV-ready TVs and monitors

The advantage of an integrated DTV set is that it can tune both analog and digital TV channels at the same time. All you'll need to do is add an external antenna and you are ready to watch DTV.

However, integrated DTV sets are not as common as DTV-ready TVs and monitors. If you already own a DTV-ready TV with component video inputs, you can enjoy DTV broadcasts by simply adding a low-cost DTV set-top receiver and antenna.

2. Using your existing analog TV set

Your analog TV set can be used to view down-converted DTV broadcasts by connecting the DTV set-top receiver to your composite (yellow RCA jack) or S-video (black circular jack) AV inputs, as well as connecting stereo audio inputs. While the picture quality won't be as good as you'd see on a DTV-ready TV set, it will be as good or slightly better than analog TV broadcasts.

3. Using a personal computer and monitor

There are plug-in cards available that will receive and display DTV broadcasts on your computer monitor. In addition, many computer monitors will display one or more of the DTV program formats directly. The most compatible format is 480p, which is similar to the VGA (640x480 pixel) computer display standard. You may be able to watch DTV broadcasts by connecting a computer monitor to the 15-pin jack on the rear of the set-top DTV receiver.

NOTE

This television receiver supports the copy protection system regulated by DTLA (Digital Transmission Licensing Administrator). It should be noted that copy protected content may not be viewable depending on particular connections. For details, please see page 1.11.

Q&A

1. Is the antenna I use for existing TV reception good enough for DTV?

Over-the-air (OTA) digital TV broadcasting uses the same channels as analog TV and works well with many existing TV antennas. However, DTV broadcast channel assignments are different than analog channels. You should find out whether your local DTV broadcasts are on VHF (channels 2-13) or UHF (channels 14-69) to see if you need a different antenna.

If your DTV channels are on UHF and you already get good UHF reception, your present antenna may work fine. The same holds true for VHF DTV reception. Note that in some markets, both VHF and UHF channels are used for DTV broadcasts.

You can find out the latest DTV channel assignments for your area by browsing selected Internet web sites such as www.titantv.com , www.10000watts.com, and www.fcc.gov.

2. How difficult is it to receive DTV signals indoors?

This depends on whether your local DTV stations are running full power or not and how close your location is to the transmission tower. DTV receivers do not require as much signal as analog TV receivers to produce high-quality images and sound.

Once the DTV signal level exceeds a certain threshold at the receiver, the digital video and audio data is decoded at the same quality it was originally encoded for broadcast. This is a big advantage for DTV over analog TV - there is no noise, ghosting, static, or scratchy audio.

3. How can I connect an antenna in my townhouse, co-operative apartment, condominium, or apartment?

The Federal Communications Commission's OTARD Rule (part of the Telecommunications Act of 1996) allows residents of condominiums, townhouse, or members of neighborhood associations to put up outside antennas for reception of broadcast TV signals as long as those antennas are not located in common areas and are no more than 12' in height.

Residents of rental units (apartments, etc) are not covered by the OTARD rules and will have to use indoor antennas to receive DTV broadcasts. It is possible that the landlord of an apartment complex can provide broadcast DTV signals via a master TV antenna system to each apartment.

Q&A

4. Can I connect my DTV set-top receiver to my cable TV service?

Cable TV systems use a different method for transmitting digital TV programs that is currently incompatible with broadcast DTV set-top receivers. So you will still need to use an outdoor or indoor antenna to receive OTA broadcast DTV programs.

The good news is that you won't have to pay a monthly or per-program charge to watch OTA DTV and HDTV programs. They're free, unlike subscription satellite TV or premium cable TV. All you need is an antenna and a DTV set-top receiver to enjoy clear, sharp widescreen images and high-quality audio.

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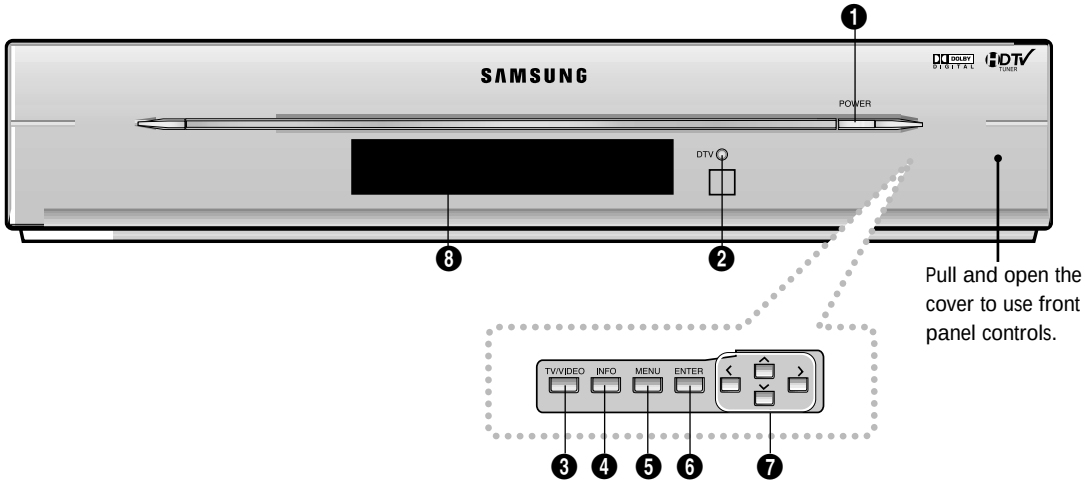
Front Panel Controls and LEDs



❶ POWER
Press to turn the power on or off.

❷ DTV (LED)
When a digital signal is received, the LED indicator lights up Green.

❸ TV / VIDEO
Press to select another source (STB, VCR, CATV, or DVD).

❹ INFO
Press to display information about the current box settings and program:
Channel number, Time, Program title, Program duration, Caption, Rating control, Digital picture grade, and MTS language.

❺ MENU
Press to display the on-screen menus.

❻ ENTER
Press to activate a selection when using the on-screen menus.

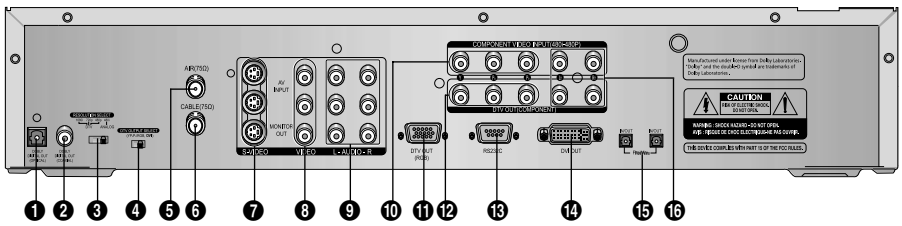
❼ Menu Up / Down / Left / Right
Use to change channels or to move highlight (when using the on-screen menus).

❽ Display
Displays the current status of video, audio and source.

NOTES

In this instruction book, the terms "Set-Top Box" and "DTV" are equivalent.
Both terms appear in this instruction book, on the remote control markings, and on the On-Screen display.

Rear Panel Jacks



❶ DOLBY DIGITAL OUT (OPTICAL)
Use to connect the Digital Audio Input of your TV or audio component.

❷ DOLBY DIGITAL OUT (COAXIAL)
Use to connect the Digital Audio Input of your TV.

❸ RESOLUTION SELECT SWITCH
Switches between 1080i (interlaced scanning), 720p (progressive scanning), 480p (progressive scanning), and 480i (interlaced scanning) formats. Switches the DTV OUT (YP_BP_R/RGB) to the following formats:

- **1080i (Interlaced Scanning)**
  Use this setting for an HDTV Ready 16X9 (wide screen) aspect ratio TV monitor with HDTV ready component video inputs that can handle the 1080i video output format.
- **720p (Progressive Scanning)**
  Use this setting for an HDTV Ready 16X9 (wide screen) aspect ratio TV monitor with HDTV ready component video inputs that can handle the 720p video output format.
- **480p (Progressive Scanning)**
  Use this setting for a Digital Ready 4X3 aspect ratio TV monitor with Progressive Scanning DTV ready component video inputs that can handle the 480p video output format. The TV monitor may be labeled Enhanced Definition or Progressive Scanning, but not Wide Screen.
- **480i (Interlaced Scanning)**
  Use this setting for a conventional TV with regular video, S-Video, or component video inputs.

❹ DTV OUT SELECT
Use to select YP_BP_R/RGB,DVI according to the video output from the TV or monitor.

❺ RF (AIR) INPUT
Connect the Air antenna here.

❻ RF (CABLE) INPUT
Connect the CATV cable here.

❼ S-VIDEO INPUT / OUTPUT
Provides good picture quality. If your TV or monitor has S-Video capability, use this jack along with the Audio/Video jacks to connect the Set-Top Box. Use this output for conventional TV sets that have an S-Video input but no component video inputs.

❽ VIDEO INPUT / OUTPUT
The two jacks on top are for VIDEO INPUT and the one on the bottom is for MONITOR (VIDEO OUTPUT). These jacks should be used for an ordinary TV not having S-Video or Component Video Input/Output.

❾ AUDIO INPUT / OUTPUT
The two sets of jacks on top are for AUDIO INPUT and the one set on the bottom is for MONITOR (AUDIO OUTPUT).

❿ COMPONENT VIDEO INPUT (YP_BP_R format)
Use to input 480i/480p video source.

NOTES

The use of 1080i on a 4X3 monitor or the use of 480p on a 16X9 monitor may cause aspect ratio picture distortion. 720p will only work on selected HDTV Ready TVs. Check the TV monitor's owner's manual to verify this capability. 480i will only work on conventional TV sets.

If you turn the switch while the system is operating, the system will be rebooted.

⓫ DTV OUT (RGB format)
You can connect RGB to a TV, computer monitor, or another video component input. 1080i, 720p, and 480p are available by setting the RESOLUTION SELECT switch.

⓬ DTV OUT COMPONENT (YP_BP_R format)
You can connect YP_BP_R to a TV, computer monitor, or another video component input. As with DTV OUT (RGB format), 1080i, 720p, and 480p are available by setting the RESOLUTION SELECT switch.

⓭ RS232C
Used for service.

⓮ DVI OUT
Use to connect a device equipped with DVI interface.
DVI OUT supports HDCP function.(See Notes on page 1.9.)

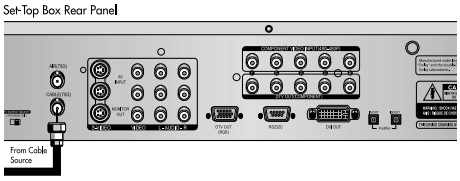
⓯ FireWire(IEEE1394) INPUT / OUTPUT
Use to connect external devices (D-VHS, AV-HDD, etc.)

⓰ L / R ANALOG-AUDIO OUTPUTS
Connect these terminals to the analog audio inputs of a TV set (i.e., to a TV that has jacks for L/R inputs). Or, connect these terminals to the L/R inputs of a separate audio component.

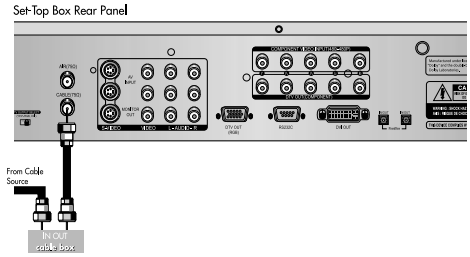
Connecting Antennas

This section shows how to connect a cable TV with or without a cable box, and how to connect an indoor or outdoor antenna.

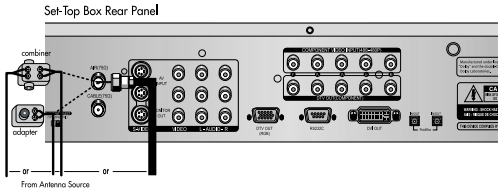
1 **Cable TV without a Cable Box**: If you have a cable TV and do not use a cable box, connect the cable to RF (CABLE) INPUT on the rear of the Set-Top Box.



2 **Cable TV with a Cable Box**: If you have a cable box, connect as shown in the illustration to the right.
If you want to connect a VCR with your cable box, see the section on how to connect a VCR with a cable box in page 1.7 .



3 **Indoor / Outdoor Antenna**: You may need a 75Ω adaptor or a combiner, as shown in the illustration right.



NOTES

- *If your antenna has separate leads for VHF/UHF signals, you will need to purchase a combiner and connect it as shown in illustration above.*
- *The Set-Top Box can receive DTV signals in the event that a local cable provider is passing 8VSB through on their system.*

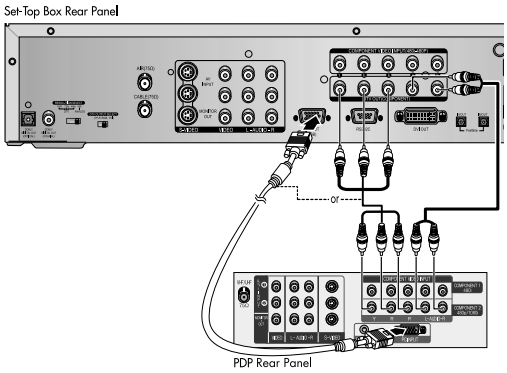
Connecting the Set-Top Box to a TV Set

Plasma Display Panel (PDP)

1 Connect an antenna cable to the RF input jacks on the Set-Top Box.

2 Connect the Video Cables.

- **YP_BP_R format**: Connect a video cable between the DTV OUT COMPONENT jacks on the Set-Top Box and the DTV INPUT jacks on the PDP.
- **RGB format**: Connect a video monitor cable between the DTV OUT (RGB format) jack on the Set-Top Box and the RGB VIDEO IN jack on the PDP.



3 Connect the Audio Cables

Connect an audio cable between the Lt/Rt AUDIO OUT jacks on the Set-Top Box and the L/R AUDIO IN jacks on the PDP.

NOTE

You must set "DTV OUT SELECT (YP_BP_R /RGB, DVI)" properly for the PDP INPUT jack.

Digital Ready TV or Normal TV

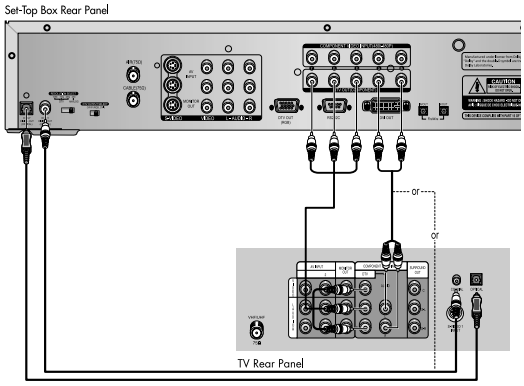
1 Connect an antenna cable to the RF input jacks on the SetTop Box.

2 Connect the Video Cables.

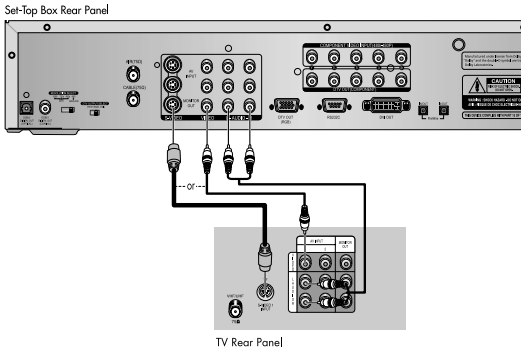
- **Digital Ready TV**: Connect a video cable between the DTV OUT COMPONENT (YP_BP_R) jacks on the Set-Top Box and the DTV INPUT jacks on the TV.
- **Normal TV**: Connect a video cable between the VIDEO OUT jack on the Set-Top Box and the VIDEO INPUT jack on the TV. Or, connect an S-Video cable between the S-VIDEO OUTPUT jack on the Set-Top Box and the S-VIDEO INPUT jack on the TV.

3 Connect the Audio Cables

- **Digital Ready TV**: Connect an audio cable between the DOLBY DIGITAL OUT (optical or coaxial) jack on the Set-Top Box and the Dolby Digital In jack on the TV. Or, connect an audio cable between the Lt/Rt AUDIO OUT jacks on the Set-Top Box and the L/R AUDIO IN jacks on the TV.
- **Normal TV**: Connect an audio cable between the L/R AUDIO OUT jacks on the Set-Top Box and the L/R AUDIO IN jacks on the TV.



<Digital Ready TV>



< Normal TV>

NOTES

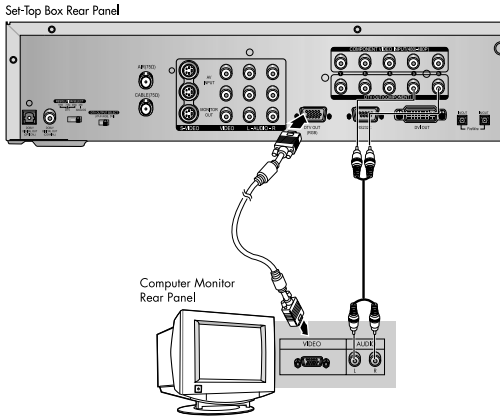
- *The TV set must be "digital compatible" (i.e., it must have appropriate audio and digital video terminals).*
- *If 1080i, 720p, or 480p (DIGITAL) is selected with the RESOLUTION SELECT switch on the Set-Top Box, the On-Screen Display menus will not be supported for VIDEO OUT and S-VIDEO OUT. The OSD menus for VIDEO OUT and S-VIDEO OUT are supported only when 480i (ANALOG) is selected.*
- *You must set "DTV OUT SELECT (YP_BP_R /RGB, DVI)" for YP_BP_R interface.*

Connecting the Set-Top Box to a Computer Monitor

1 Connect an antenna cable to the RF input jacks on the Set-Top Box.

2 Connect a computer video monitor cable between the DTV OUT (RGB format) jack on the Set-Top Box and the VIDEO IN jack on the computer monitor.

3 Connect an audio cable between the Lt/Rt AUDIO OUT jacks on the Set-Top Box and the L/R AUDIO IN jacks on the computer monitor.



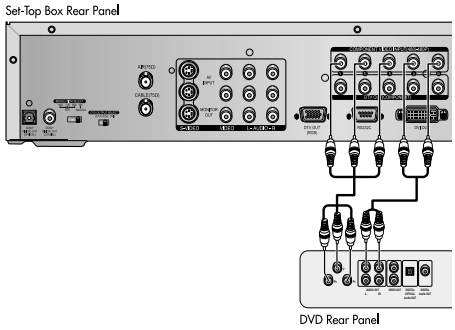
NOTE

You must set "DTV OUT SELECT (YP_BP_R /RGB,DVI)" for RGB interface.

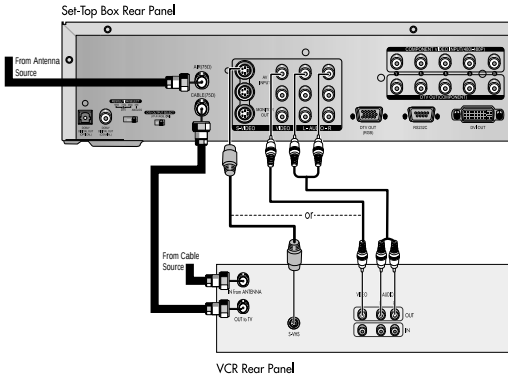
Connecting Video Component

This section shows how to connect video components, such as a Digital Video Disc (DVD) player, a VCR without/with a cable box, a VCR using MONITOR OUT, a laser disc player, or a camcorder to your Set-Top Box.

1 Digital Video Disc (DVD) Player
Connect a DVD player to the COMPONENT VIDEO INPUT jacks on the Set-Top Box.
For further information on video connections, see the owner's manual for your DVD player.

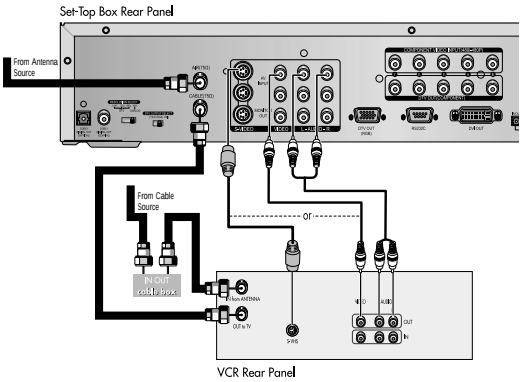


2 VCR without a Cable Box
Connect a VCR without a cable box to the Set-Top Box, as shown in the illustration right.



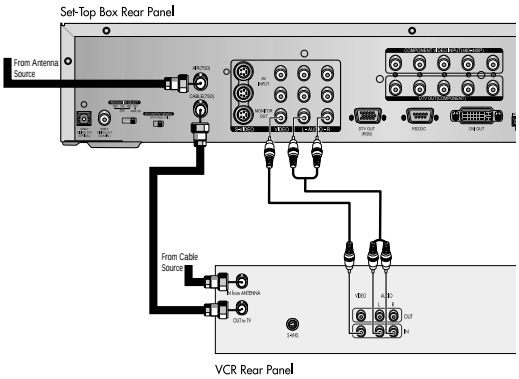
3 VCR with a Cable Box

Connect a VCR with a cable box to the Set-Top Box, as shown in the illustration right.



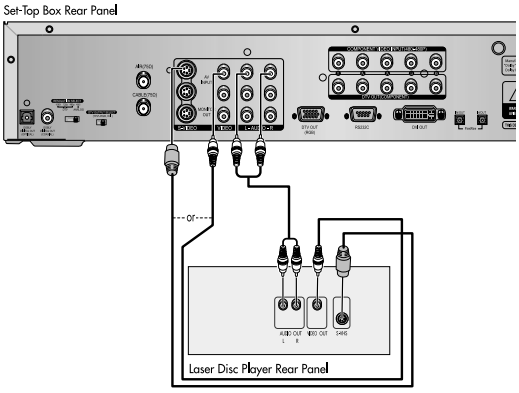
4 VCR with Monitor Out jacks

If you connect a VCR with the MONITOR OUT jacks to the Set-Top Box, the VCR will record exactly what you are viewing on the Set-Top Box.



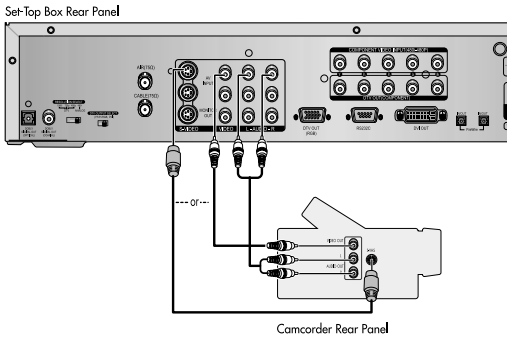
5 Laser Disc Player

Connect a laser disc player to the Set-Top Box, as shown in the illustration to the right.



6 Camcorder

Connect a camcorder to the Set-Top Box, as shown in the illustration to the right. Connect Audio/Video cables or S-Video cable between the Set-Top Box and camcorder.



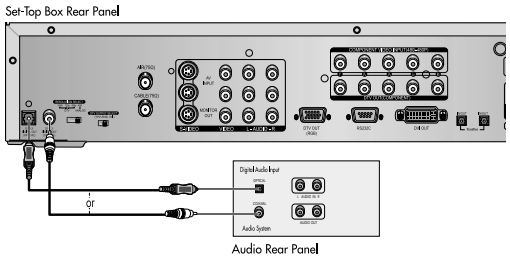
NOTE

If both S-Video and Video cables are connected, S-Video will override Video.

Connecting an Audio Component

There are many types of audio systems on the market today.

A simplified illustration of an audio system is shown to the right. For more information, see your audio system owner's manual.



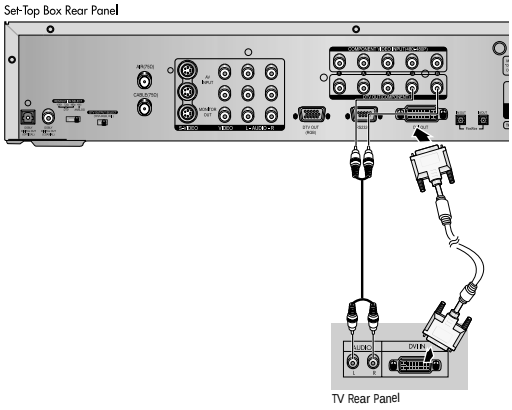
If your audio system has :

- A coaxial digital audio input, connect the audio system to the DOLBY DIGITAL OUT (COAXIAL) jack on the Set-Top Box.
- An optical digital audio input, connect the audio system to the DOLBY DIGITAL OUT (OPTICAL) jack on the Set-Top Box. Be certain to remove the black cover from the optical output before inserting the cable.
- Both coaxial and optical digital audio inputs, SAMSUNG recommends you use the optical digital output. Do not connect both optical and coaxial cables. This may damage your audio system.

Connecting the Set-Top Box to a Device with a DVI jack

1 Connect a DVI cable between the DVI OUT jack on the Set-Top Box and the DVI IN jack on the DVI device (TV, monitor).

2 Connect audio cables between the Lt/Rt AUDIO OUT jacks on the Set-Top Box and the L/R AUDIO IN jacks on the DVI device.



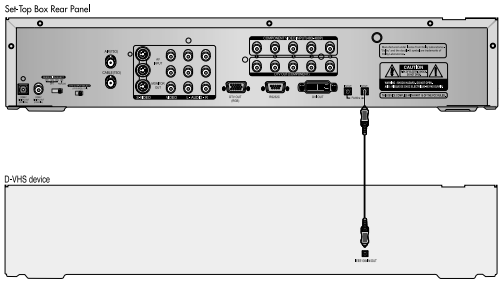
NOTES

- *This Set-Top Box supports HDCP technology. HDCP stands for High-bandwidth Digital Content Protection, which provides secure data transmission for high definition video.*
- *Only DVI-HDCP supported devices can be connected.*
- *A 25-pin DVI-D jack is used, so only digital signals can be viewed.*

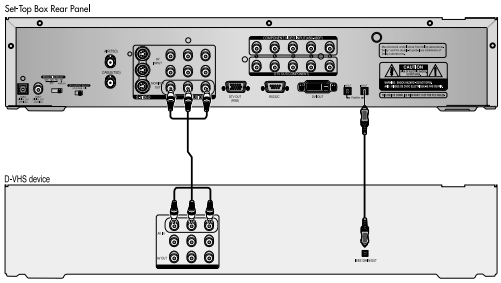
Connecting a D-VHS device

1 Digital Signal IN

Digital recording: Connect a FireWire cable (not supplied) between the IEEE1394 IN / OUT connector on the D-VHS device and the FIREWIRE IN / OUT connector on the Set-Top Box.

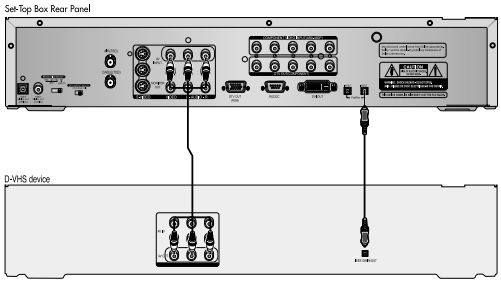


Analog recording: Connect a FireWire cable between an D-VHS device and the Set-Top Box and also an analog cable between the AV input on the D-VHS device and the AV output on the Set-Top Box.



2 Analog Signal IN

Connect a video cable between the AV output on the D-VHS and the AV input on the Set-Top Box.



NOTES

- *If either two S-Video signals or AV1, AV2 signals are input at the same time, press the TV / VIDEO button on the remote control to designate AV1 or AV2 before displaying. If S-Video and AV1 signals are input at the same time, S-Video signal will first be displayed.*
- *Both FireWire and i.Link are trademarked names of IEEE1394 standard.*
- *This Set-Top Box is fully compatible with JVC HM-DH30000U and Mitsubishi HS-HD2000U.*
- *For further information on D-VHS connections, see your IEEE1394-equipped D-VHS device's owner's manual.*

Important Notes About Copy Protection

* If an external device signal (DVD, AV1, AV2) is input, you will not be able to record contents using an analog VCR. However, you can record TV programs.

* To play the D-VHS contents protected by a copy protection system, connect to the YP_BP_R OUTPUT jack on your display (monitor, TV). You can view only in 720p and 1080i modes.

  - If the RGB jack on your display (monitor, TV) is connected, only TV programs can be viewed and recorded.

* For DVI connections, the external input can be viewed only through an authorized display (monitor, TV). However, TV programs can be viewed through all devices.

* The availability of viewing and recording TV programs depends on IN / OUT connections as shown in the table below.

OUT / IN	YP_BP_R (DTV OUT COMPONENT)	Video OUT / S-Video	RGB	DVI
TV Signal (Air / Cable)	Both viewing and recording are available.			
D-VHS Signal through FireWire	Viewing only in 1080i, 720p modes	Viewing, No Recording	No Viewing	Viewing only through an authorized display
Video IN / S-Video				
YP_BP_R (COMPONENT VIDEO INPUT)				

NOTES

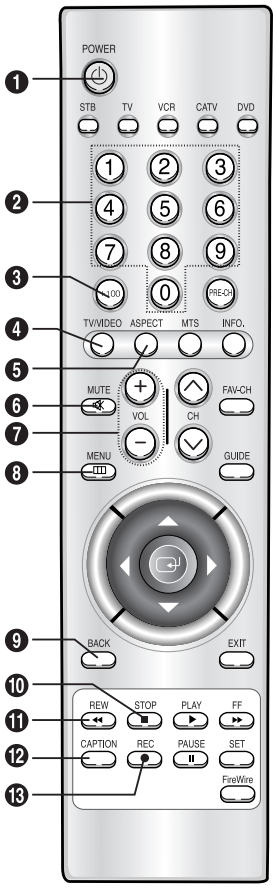
- *If 480p (YP_BP_R) OUT or RGB OUT is connected to play the D-VHS device through FireWire, the picture and FireWire control panel will not be viewed. To re-view TV programs, stop D-VHS playback using the STOP button on the front panel of the FireWire device or on the remote control.*
- *The COPY PROTECTION system is regulated by DTLA (Digital Transmission Licensing Administrator: Responsible for establishing and administrating the content protection system).*

Reviewing the Remote Control

The Set-Top Box remote control and on-screen menu system work together to operate the Set-Top Box as simply as possible. Understanding the remote control buttons and the menus allows you to operate the Set-Top Box with ease.

If you need some assistance while using the remote control and the menus, use the provided on-screen help feature. See "Using the On-screen Help" on page 2.5.

For #1, #2, #3, #4, see "Special Notes" on page 2.3.



❶ POWER
Press to turn the power on or off.

❷ Channel Number Buttons #1, #2, #3
Press to directly tune to a particular channel.

❸ +100 #1
Press to select the cable TV channels over 100.

❹ TV/VIDEO #1
Press to view the signal sources that are available for display on your TV.

❺ ASPECT #1
Press to change the screen format according to the screen aspect ratio and the input signal format.

❻ MUTE #1
Press to temporarily cut off the sound.

❼ Volume Up/Down #1
Press to increase or decrease the volume.

❽ MENU #1
Press to display the on-screen menus or to switch back to the previous menu screen that was displayed.

❾ BACK #1
Press to return to the previous menu.

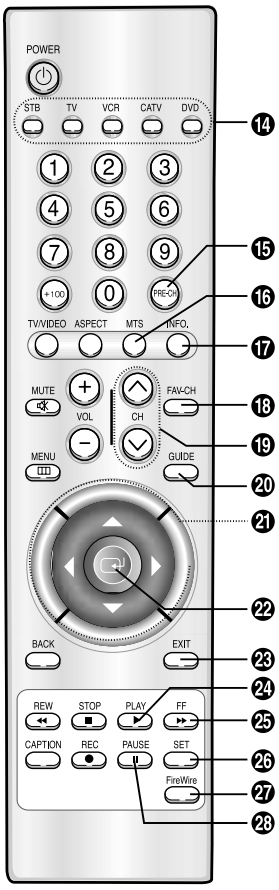
❿ STOP #2, #4
Press to stop a videocassette or DVD.

⓫ REW (Rewind) #2, #4
Press to rewind a videocassette or to reverse search a DVD.

⓬ CAPTION #1
When a digital signal is received, Service1, Service2,... or Service6 can be selected.
When an analog signal is received, CC1, CC2, CC3, or CC4 can be selected.

⓭ RECORD #2
Press to record a videocassette.

Remote Control



⓮ COMPONENT SELECTION BUTTONS
Press to select a particular component (STB, TV, VCR, CATV, DVD) to be controlled by the remote control. See "Programming the Remote Control for Other Components" on page (4.19).

⓯ PRE-CH (Previous Channel) #1
Press to alternate between the current channels and the last channel that was displayed.

⓰ MTS (Multitrack Sound) #1
Press to select available "multitracks." (Depending on the broadcast, one or more foreign languages might be available.)

⓱ INFO. #1
Press to display information about the current box settings and program: Channel number, Time, Program title, Program duration, Caption, Rating control, Digital picture grade, and MTS language.

⓲ FAV-CH (Favorite Channel) #1
Press to switch among your favorite channels.

⓳ Channel ▲,▼ (Channel Up and Down) #1, #2, #3
Press to change channels.

⓴ GUIDE #1
Press to display the on-screen Electronic Program Guide (EPG).

㉑ Menu UP / DOWN / LEFT / RIGHT #1
Use to move highlight up, down, left, or right.

㉒ ENTER #1
While using the on-screen menus, press ENTER to activate (or change) a particular item.

㉓ EXIT #1
Press to completely exit from the on-screen menus.

㉔ PLAY #2, #4
Press to play a videocassette or DVD.

㉕ FF (Fast Forward) #2, #4
Press to fast forward a videocassette or forward search a DVD.

㉖ SET
Use to program the remote control for other components.
(See "Programming the Remote Control for Other Components" on page 4.19.)

㉗ FireWire
Shows connected D-VHS devices supporting AVC function and a control panel that controls the devices.

㉘ PAUSE #2, #4
Press to temporarily stop a videocassette or DVD. (A freeze-frame is displayed.)

Special Notes :

#1 The "TV" buttons (VOL+/-, MUTE, TV/VIDEO, +100):

To use these buttons, you must first switch the remote control to "TV" mode. (Press the TV button on the remote control to select "TV")

#2 The "VCR" buttons (FF, REW, PLAY, STOP, PAUSE, RECORD):

To use these buttons, you must first switch the remote control to "VCR" mode. (Press the TV button on the remote control to select "VCR.")

#3 The "CATV" buttons (POWER, CH▲▼,Number buttons):

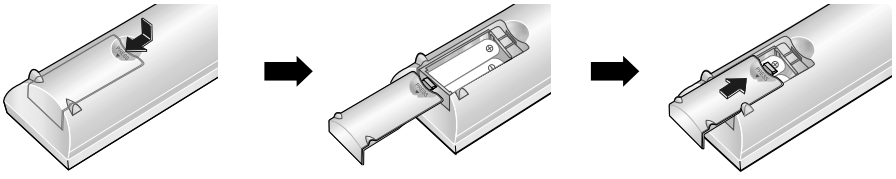
To use the CABLE Set-Top Box, you must first switch the remote control to "CATV" mode. (Press the CATV button on the remote control to select "CATV.")

#4 The "DVD" buttons (FF, REW, PLAY, STOP, PAUSE):

To use these buttons, you must first switch the remote control to "DVD" mode. (Press the DVD button on the remote control to select "DVD")

Installing the Batteries

Press and remove the battery cover on the back of the remote control.
Put two AA batteries into the compartment and replace the battery cover.



Programming the Remote Control

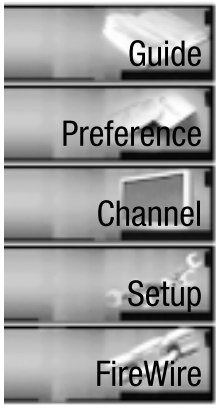
To program the remote control to operate a VCR, Cable Box, TV, DVD player, or Set-Top Box, see "Programming the Remote Control to Operate Other Components." (See page 4.20)

The On-Screen Menu System

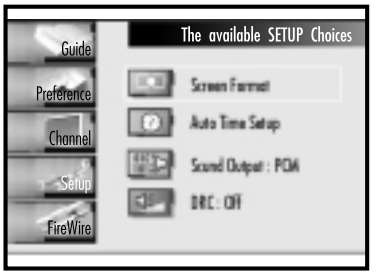
First, press MENU button, then use the Menu UP/DOWN/LEFT/RIGHT buttons in the center of the remote control to move between the menus.

To enter a particular menu, press ENTER. The menu system has three different levels. The five icons on the left side of the screen are the “first level” menu: Guide, Preference, Channel, Setup, and FireWire. When you activate one of these five icons, the on-screen display presents a “second level” submenu (which often leads to a “third level” submenu).

Main Menu, “Level 1”

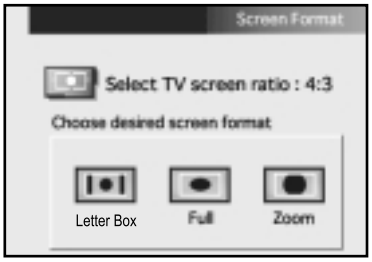


Sub-menu, “Level 2”



Example:The “Setup” sub menu

Sub-menu, “Level 3”



Example: ”Screen Format”

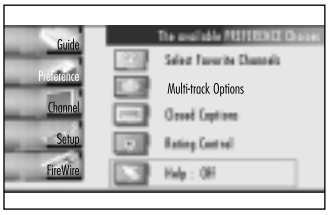
Using the On-screen Help

To turn the on-screen help on:

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

Use the Menu Up/Down buttons to highlight Help and press ENTER.



3 "Help: Off" changes to "Help: On" and the on-screen help appears.

Use the Menu Up/Down buttons to highlight each of the icons and read the description of the features that each icon represents.

You can press EXIT at any time, and the menus will disappear from the screen.

To turn the on-screen help off:

Use the Menu Up/Down buttons to highlight the Help: off icon and press ENTER. The on-screen help will disappear.

Viewing the Information

You can quickly check the status of many of the Set-Top Box features and options by using the Info button.

The Info shows:

- The major channel number and the minor channel number (if you are viewing a digital channel).
- The current time and date. See page 3.7.
- Program title.
- Program duration.
- The status of closed captions (if the broadcast includes them, and if you have turned on the closed captions feature). See pages 4.8~4.9
- Rating control settings. See pages 4.10~ 4.12.
- The digital picture grade, such as HD (High Definition) or SD (Standard Definition).
- The audio track languages (English, Spanish, French). See page 4.4.

To view the Info:
Press INFO on the remote control.

To hide the Info:
Press INFO again or wait 10 seconds, and the Info will disappear.

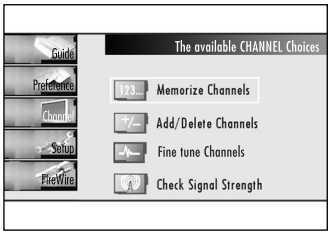
Memorizing Channels

Before you can use any of the special channel buttons (CH ▲▼, FAV-CH), the available channels must first be scanned and memorized. This is an easy, automatic process that typically takes two minutes. To memorize channels:

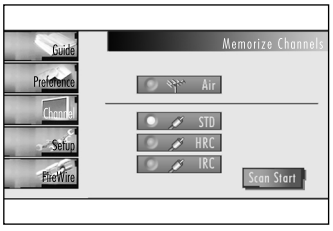
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Channel icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Memorize Channel icon and press ENTER.



3 Use the Menu Up/Down buttons to select Air or Cable (STD, HRC, or IRC).
Use the Menu Up/Down buttons to highlight the "Scan Start" icon and press ENTER.



4 That's it. The Set-Top Box will automatically scan and store all of the digital (DTV) channels and analog channels that are available in your local area.

5 Press EXIT when channel memorization is complete.

NOTES

The Set-Top Box MUST be connected to an antenna in order to receive digital TV signals.
Even if a particular channel is deleted from the memory, you can always tune to that channel directly by using the number buttons on the remote control.

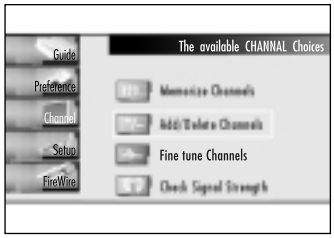
Adding and Deleting Channels

To add channels that were not memorized (or to delete unwanted channels from the memory):

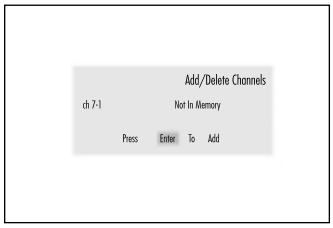
1 Enter the digits of the channel to be added or deleted.

2 Press the MENU button on the remote control. Use the Menu Up/Down buttons to highlight the Channel icon and press ENTER.

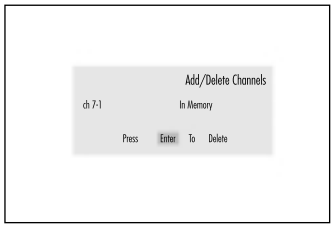
3 Use the Menu Up/Down buttons to highlight the Add/Delete Channels icon and press ENTER.



4 Repeatedly pressing ENTER will alternate between Add channel and Delete channel.



Add channel



Delete channel

Press the number buttons (or CH ▲▼ buttons) to switch to the appropriate channel, and then repeat step 4. Press EXIT.

Changing Channels

Number buttons

Press the number buttons (0 – 9) to enter channel numbers.

PRE-CH buttons

Press to return to the previous channel you viewed. For example, if the box is tuned to channel 55 and then you change to channel 56, pressing PRE-CH will return to channel 55.

FAV-CH button

Press to switch among your favorite channels. (See page 3.4)

CH ▲ and ▼ button

Press CH ▲ or ▼ to move up or down to the next available channel. Press and hold CH ▲ or ▼ to cycle quickly through the channels.

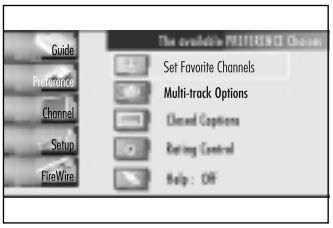
NOTE

You must first complete the "Memorize Channels" procedure (See page 3.1) before you can use the CH ▲ and ▼, FAV-CH buttons.

Setting Your Favorite Channels

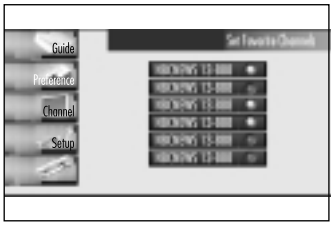
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER. Use the Menu Up/Down buttons to highlight the Set Favorite Channels icon and press ENTER.



3 To designate a particular channel as a "Favorite Channel," highlight the channel number and press ENTER.

For each Favorite Channel, a yellow dot icon will appear next to the channel number. (When more than six favorite channels exist, press the arrow buttons to add channels.)



4 Press EXIT.

5 You can now jump from one favorite channel to another by pressing the FAV-CH button.

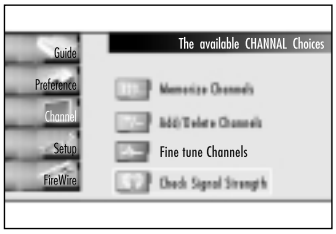
Fine Tuning Analog Channels

The Fine Tuning function lets you manually adjust the TV's tuner if you have difficulty tuning analog channels.

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Channel icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Fine Tune Channels icon and press ENTER.



3 Using the Menu Up/Down buttons,adjust the current broadcasting channel for fine tuning. If you want to cancel "Manual Fine Tuning," press the "0" button on the remote control.

4 Press EXIT.

NOTE

Only analog TV channels can be fine tuned.

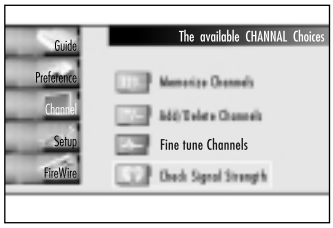
Checking the Digital-Signal Strength

Unlike analog channels, which can vary in reception quality from “snowy” to clear, digital (HDTV) channels have either perfect reception quality or you will not receive them at all. So, unlike analog channels, you cannot fine tune a digital channel.
You can, however, adjust your antenna to improve the reception of available digital channels.

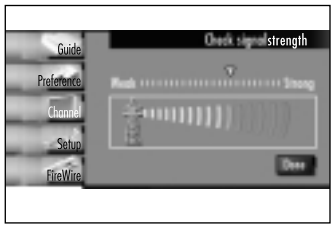
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Channel icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Check Signal Strength icon and press ENTER.



3 If the signal strength meter indicates that the signal is weak, physically adjust your antenna to increase the signal strength. Continue to adjust the antenna until you find the best position with the strongest signal.



4 When you have finished adjusting your antenna, use the Menu Up/Down buttons to highlight “Done” and press ENTER.

NOTE

“No Signal” may appear on the screen depending on the broadcasting station conditions, even though an incoming broadcast signal exists.

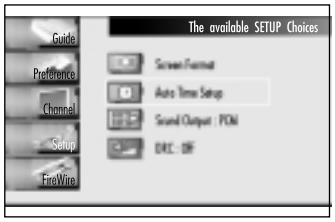
Setting the Time and Date

First, select the channel that has a Digital Signal.

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Setup icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Auto Time Setup icon and press ENTER.



3 You will be asked if your local area observes Daylight Saving Time. Use the Menu Up/Down buttons to highlight Yes, or No, and press ENTER.

4 Use the Menu Up/Down/Left/Right buttons to highlight the time zone for your local area (and to move highlight to the appropriate time zone on the map of the United States). Press ENTER.

That's it. As you have received a digital signal, the time will be set automatically.

5 Press EXIT

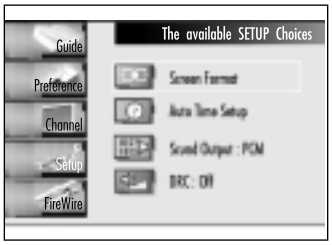
Changing the Screen Format

Your options in the Screen Format menu depends on the type of TV or monitor you are using with your Set-Top Box.

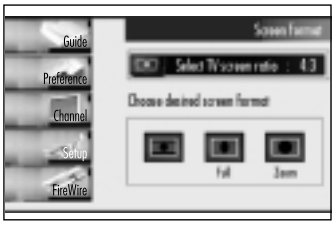
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Setup icon and press ENTER.

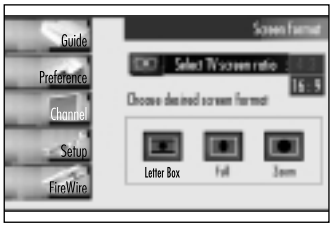
Use the Menu Up/Down buttons to highlight the Screen Format icon and press ENTER.



3 Use the Menu Up/Down buttons to highlight the TV screen ratio icon and press ENTER. The sub menus will be displayed.
Then, use the Menu Up/Down buttons to select the sub menu you want and press ENTER.



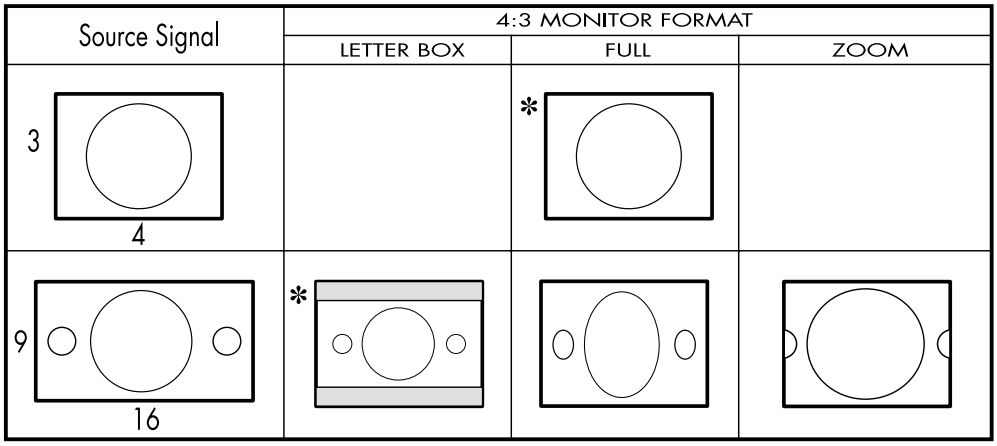
4 Use the Menu Left/Right buttons to highlight the screen format you want and press ENTER.



5 Press EXIT.

NOTE

You can also change the screen format by pressing the ASPECT button on the remote control.



With a 4:3 Ratio TV or Monitor

If you are using a 4:3 aspect ratio TV or monitor and receiving an image with a 16:9 aspect ratio, you need to specify how the image is displayed.

Letter box

Choose this when receiving a 16:9 image and you want to see the original wide format. Letter boxing shrinks the picture so the entire image will fit on the screen. Blank panels appear at the top and bottom of the screen. 1080i doesn't support letter box mode. FULL mode will be automatically selected.

Full

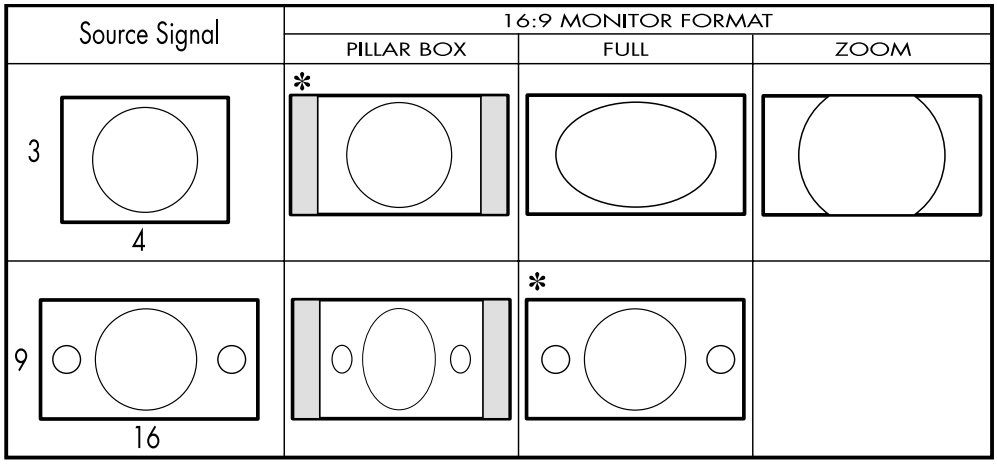
Choose this when you want the television to adjust the16:9 image vertically so it fills your 4:3 screen. No blank panels will be added, and the image is horizontally unaltered.

Zoom

Choose this when receiving a 16:9 image and you want the wide movie format to fill the entire screen. Left and right portions of the picture are cropped, or cut.

NOTE

This indicates the default format in each condition, which may be modified by user's choice.



With a 16:9 Ratio TV or Monitor

If you are using a 16:9 aspect ratio TV or monitor and receiving an image with a 4:3 aspect ratio, the image will be displayed at the 4:3 aspect ratio on your monitor unless you specify otherwise. The Screen Format menu allows you to adjust the image through the following options:

When a 4:3 source signal is received

Pillar box

Choose this when receiving a 4:3 image and you want the on-screen appearance of the video to be a centered picture with blank panels on the right and left sides.

Full

Choose this when you want the television to adjust the 4:3 image horizontally so it fills your 16:9 screen. No blank panels will be added, and the image is vertically unaltered. This setting is especially useful for viewing 4:3 formatted DVDs.

Zoom

Choose this when receiving a 4:3 image and you want to maintain the correct image proportion. Top and bottom portions of the picture are cropped, or cut.

When a 16:9 source signal is received

Pillar box

Choose this when receiving a 16:9 image and you want the on-screen appearance of the video to be a centered picture with blank panels on the right and left sides.

Full

This is the default format when a 16:9 source signal is received.

NOTE

Changing the Screen Format feature availability depends on the Resolution Select switch setting and the current broadcasting signal format.

Choosing a Sound "Multitrack" (When a Digital Signal is received)

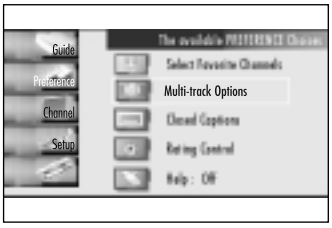
The digital-TV transmission system is capable of simultaneous transmission of many audio tracks (for example, simultaneous translations of the program into foreign languages). The availability of these additional "multitracks" depends upon the program.

Selecting a multitrack language

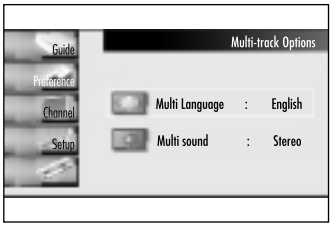
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Multi-track Options icon and press ENTER.



3 Use the Menu Up/Down button to highlight "Multi Language" and press ENTER. The submenus will be displayed.



4 Use the Menu Up/Down buttons to choose the language (English, Spanish, or French) you want and press ENTER.

5 Press EXIT.

NOTE

- *You can switch between current available multitrack languages by pressing the MTS button on the remote control.*
- *Once a particular language is selected, it will be the default language even if you turn the TV off or change the channel.*

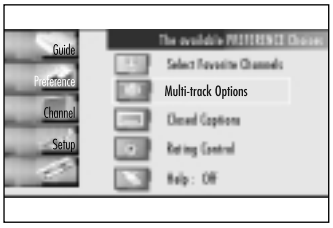
Choosing a Sound "Multitrack" (When an Analog Signal is received)

Selecting a multitrack sound

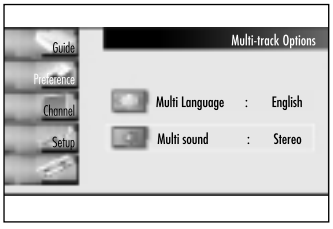
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Multi-track Options icon and press ENTER.



3 Use the Menu Up/Down buttons to highlight the Multi Sound icon and press ENTER. The submenus will be displayed.



4 Use the Menu Up/Down buttons to choose the submenu (Mono, Stereo, or SAP) you want and press ENTER.

NOTES

- *The default sound mode is Stereo.*
- *You can also change sound multitrack by pressing the MTS button on the remote control.*

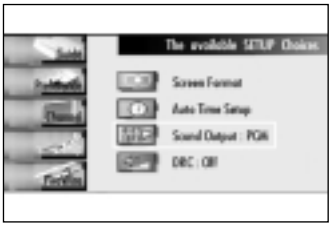
Choosing a Digital Sound Format (Dolby or PCM)

Both analog and digital sounds can be output from the rear-panel connectors on your Set-Top Box. The digital sound outputs are optical and coaxial connectors labeled “Dolby Digital Output.” After connecting an optical or a coaxial digital-audio component, you must specify the transmission format (Dolby or PCM, as appropriate to your component).

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Setup icon and press ENTER.

Use the Menu Up/Down buttons to highlight he Sound Output icon and press ENTER.



3 Use the Menu Up/Down buttons to choose the appropriate format (Dolby or PCM)and press ENTER.

4 Press EXIT.

NOTE

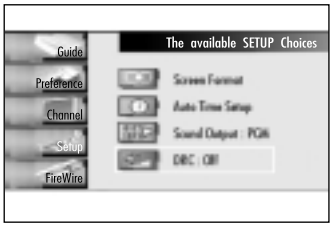
In Analog mode, only PCM is supported.

Using Dynamic Range Compression (DRC)

When you switch channels, the volume may vary depending on the channel. The Dynamic Range Compression function can adjust the volume difference automatically.

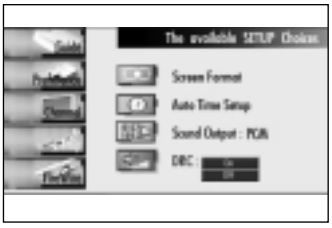
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Setup icon and press ENTER.



3 Use the Menu Up/Down buttons to highlight the DRC: On (OFF) icon and press ENTER.

Use the Menu Up/Down buttons to alternate between DRC: On and DRC: Off and press ENTER again.



4 Press EXIT.

NOTE

The DRC function operates only on digital channels.

Setting Up Digital Captions (On-Screen Text Messages)

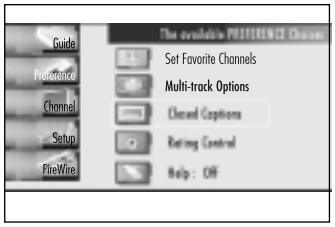
The Digital Captions function operates on digital channels.

How to Activate or Deactivate the On-screen Captions

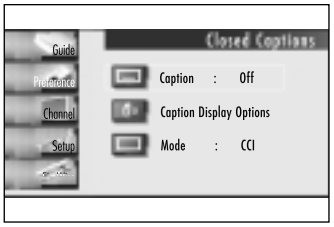
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

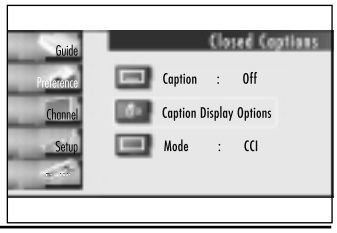
Use the Menu Up/Down buttons to highlight the Closed Captions icon and press ENTER.



3 Use the Menu Up/Down buttons to alternate between "Caption: On" and "Caption: Off" and press ENTER.

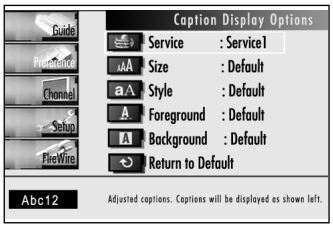


4 Use the Menu Up/Down buttons to highlight the Caption Display Options and press ENTER.

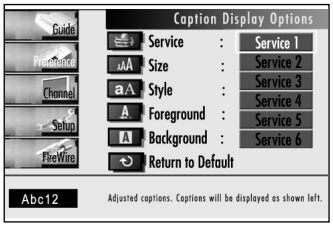


5 Select the option (Service, Size, Style, Foreground or Background) you want using the Menu Up/Down buttons.

Use the Menu Up/Down buttons to select the menu you want and press ENTER.



Service: This option consists of Service 1 ~ Service6. The default is Service 1. Either the reading level or the language may change depending on the service option.

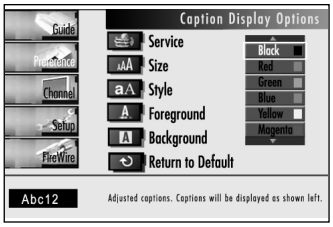


Size: This option consists of Default, Small, Standard, Large. The default is Standard.

Style: This option consists of Default, Style0 ~ Style 7. You can change the font you want. The default is Style 0.

Foreground: This option consists of Default, White, Black, Red, Green, Blue, Yellow, Magenta, Cyan. You can change the color of the letter. The default is White.

Background: This option consists of Default, White, Black, Red, Green, Blue, Yellow, Magenta, Cyan. You can change the ground color of the caption. The default is Black.



Return to Default: This option sets each of Service, Size, Style, Foreground, Background to its default.

Abc12: This will appear at bottom of the screen every time each option is applied.

NOTES

- *The availability of captions depends on the program being broadcast.*
- *For other channels, which don't operate with the Digital Captions feature, each press of the CAPTION button will alternate among CC1, CC2, CC3, CC4, and OFF.*

Setting Up Analog Captions (On-Screen Text Messages)

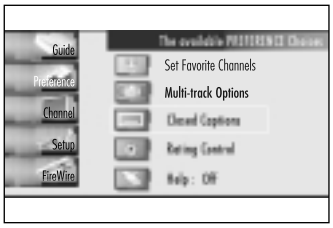
The Analog Captions function operates in either analog RF channel mode or external signal(DVD, AVI, AV2) mode. (Depending on the broadcasting signal, the Analog Captions function may operate on digital channels.)

How to Activate or Deactivate the On-screen Captions

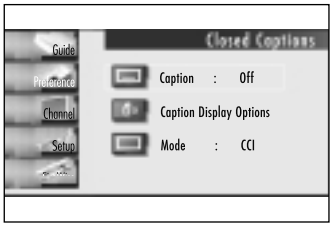
1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

Use the Menu Up/Down buttons to highlight the Closed Captions icon and press ENTER.

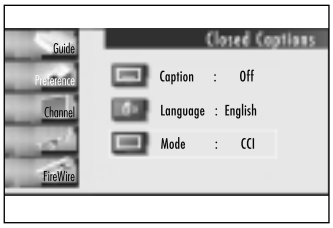


3 Use the Menu Up/Down buttons to alternate between "Caption: On" and "Caption: Off" and press ENTER.



4 Use the Menu Up/Down buttons to highlight the Mode icon and press ENTER.

Select the submenu (CC1, CC2, CC3 or CC4) you want using the Menu Up/Down buttons and press ENTER.



5 Press EXIT

NOTES

- *The availability of captions depends on the program being broadcast.*
- *You can also alternate among CC1, CC2, CC3, CC4 or OFF by pressing the CAPTION button on the remote control.*
- *Captions will not appear if CVBS OUT or S-Video is connected in DTV (1080i, 720p, 480p) mode.*

Rating Control Menu

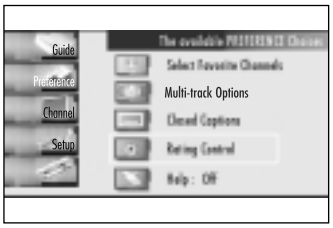
Access to channels and programs is controlled by a password (i.e., a 4-digit secret code that is defined by the user).The on-screen menu will instruct you to assign a password (and you can change it later, if necessary).

How to Change Your Password

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

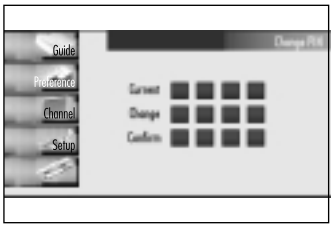
Use the Menu Up/Down buttons to highlight the Rating Control icon and press ENTER.



3 Use the Menu Up/Down buttons to highlight “Change” on the bottom and press ENTER.

4 Use the number buttons (0 – 9) on the remote control to enter your current password.

5 Use the number buttons to enter a new password.
Re-enter the new password to confirm.



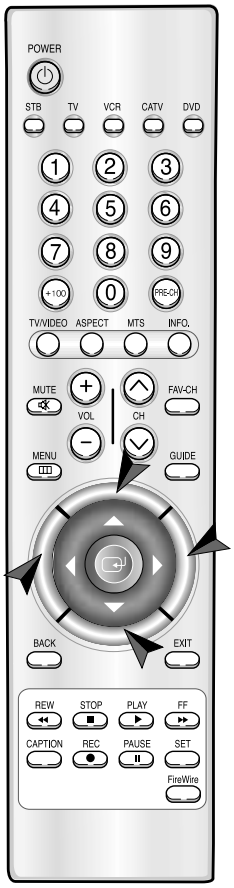
6 Your new password is now activated. Press EXIT.

NOTES

Password Error

- *If you forget the password, re-do steps 1~3.*
  At step 4, when the display asks you to enter the current password, press the master buttons (INFO, 1, 8, and 2). Enter a new password and proceed with steps 5~6.
- *The master buttons are available only in the Rating Control menu and cannot be operated during normal viewing. (If the display asks you to enter the password while blocked, the master buttons cannot be operated.)*
- *The Rating Control feature doesn’t operate with D-VHS recordings.*
- *The factory default password is ‘0000’.*

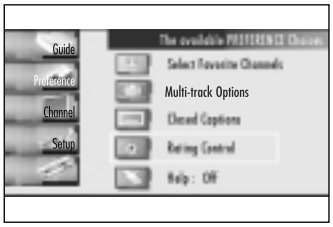
How to Lock Programs Using the TV (FCC) Ratings or MPAA Ratings



1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Preference icon and press ENTER.

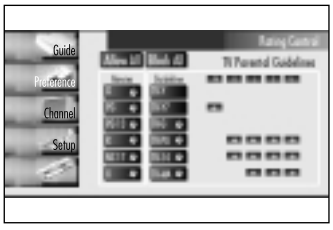
Use the Menu Up/Down buttons to highlight the Rating Control icon and press ENTER.



3 Enter your password correctly.

4 After the password is entered, the screen will display the rating control menu.

This menu lists both MPAA and TV (FCC) Parental ratings.
You can independently lock the MPAA and TV ratings.
The locked MPAA/TV (FCC) ratings are indicated by the symbol .



5 Use the Menu Up/Down/Left/Right buttons and the ENTER button to activate the appropriate restrictions for either MPAA rating system or TV (FCC) rating system.

6 Press EXIT.

Important Notes About Parental Locks ("P.Locks")

Explanation of the MPAA and TV (FCC) Rating Systems:

TV (FCC) Age-Based Ratings

TV-MA Mature audiences only. This program may contain mature themes, profane language, graphic violence and explicit sexual content.

TV-14 Parents strongly cautioned. This program may contain sophisticated themes, sexual content, strong language and more intense violence.

TV-PG Parental guidance suggested. The program may contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.

TV-G General audience. It contains little or no violence, no strong language, and little or no sexual dialogue or situations.

TV-Y7 Directed to older children. Themes and elements in this program may include mild physical or comedic violence, or may frighten children under the age of seven.

TV-Y All children. The themes and elements in this program are specifically designed for a very young audience, including children from ages two – six.

TV (FCC) Content Category

V	Violence.
S	Sexual content.
L	Offensive language.
D	Dialogue…sexual innuendo.
FV	Fantasy or cartoon violence.

MPAA Rating System (Movies)

G	General audience. No restriction.
PG	Children under 13 should be accompanied by an adult.
PG-13	Parental guidance suggested. Children under 13 should be accompanied by an adult.
R	Restricted. Viewers should be 17 or older.
NC-17	Not classified. Viewers should be 17 or older.
X	Adults only.

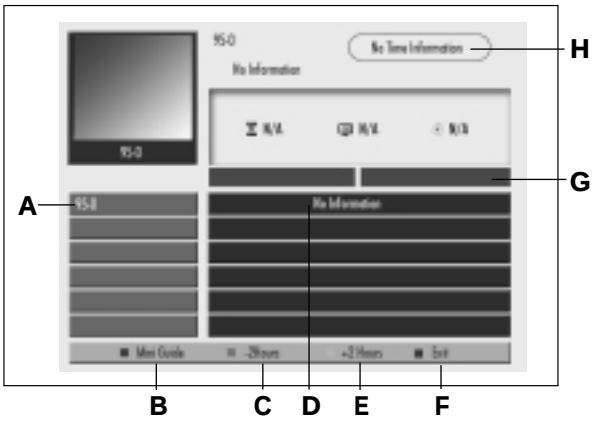
* TV (FCC) ratings: The particular rating that you have selected will be locked (and indicated as a red "L" on a blue background). Also, all of the age-based ratings will be locked within the particular group (i.e., "group 1" or "group 2").
  Suppose that the TV-G rating and all of its contents (V, S, L, and D) are locked.
  In that case, more restrictive ratings (TV-PG, TV-14, and TV-MA) and all of their contents (V, S, L, and D) are automatically locked as well.

* MPAA ratings: The particular rating that you have selected will be locked.
  In addition, more restrictive ratings will be locked as well.

* Neither TV (FCC) ratings nor MPAA ratings apply to news programs.

Electronic Program Guide

Your Set-Top Box has an Electronic Program Guide (EPG) to help you navigate through all the possible viewing options.
The EPG supplies information, such as program lists, start and end times of all available channels.
In addition, the detailed information about the program is often available in the EPG. (The availability and the amount of program details will vary depending on the broadcaster.)



Viewing the Electronic Program Guide (EPG)

A Displays which channel is currently selected to show program information in the Channel Guide.

B Switches to the mini program guide. The mini guide shows the titles of the available programs of one channel. Press the Red button ◀◀ on the remote control.

The set default guide is Mini Guide.

C Scrolls backwards quickly (2 hours). Press the Green button ■ on the remote control.

D Displays titles and other details about upcoming programs of particular channels. Highlight the program and press INFO. to see additional and detailed information. (The availability of additional details depends on the broadcaster.) Use the Menu Up/Down buttons to search information about another channel.

E Scrolls forward quickly (2 hours). Press the Yellow button ▶ on the remote control and repeatedly press ENTER until the appropriate time is displayed.

F Exits from the Program Guide and returns to normal viewing mode. Press the Blue button ▶▶ on the remote control.

G Displays the program times (arranged in 1 hour time blocks)

H Displays the current time and date.

NOTES

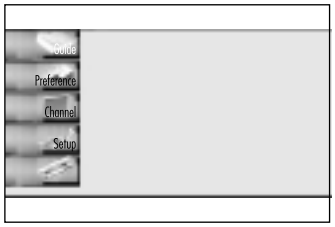
You can use the GUIDE button on the remote control to display the Electronic Program Guide. The EPG begins its list with the channel that is currently active.

Using the EPG (Electronic Program Guide)

How to Set EPG

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Guide icon and press ENTER.



3 Use the Menu Up/Down buttons to highlight the Set Default Guide icon and press ENTER.

4 Use the Menu Up/Down buttons to alternate between “Mini” and “Full” and press ENTER.

5 Press EXIT

Viewing Information about a Single Channel

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Guide icon and press ENTER.

3 Use the Menu Up/Down buttons to highlight the Mini Guide icon and press ENTER.

4 Use the Menu Up/Down buttons to view information about one channel by time.

You can switch between Full Guide mode and Mini Guide mode by pressing the Red button (REW) repeatedly.

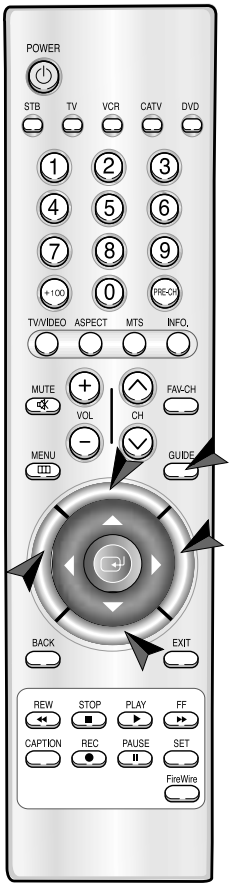
Select the program you want by using the Menu Up/Down buttons and press the INFO. button on the remote control.

5 Press the Blue button (FF) or Exit button to exit.

NOTE

You can also view information about a single channel by pressing the GUIDE button on the remote control. (The EPG should be pre-set in Mini Guide mode.)

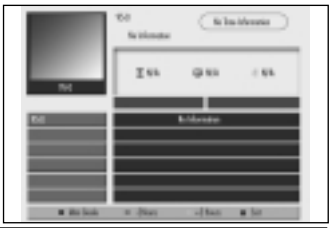
Viewing Information about Channels



1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the Guide icon and press ENTER.

3 Use the Menu Up/Down buttons to highlight the Full Guide icon and press ENTER.



4 Use the Green button (STOP) to activate "-2 Hours" and the Yellow button (PLAY) to activate "+2 Hours".

5 You may now:

- Jump to a channel directly: Use the Menu Up/Down buttons to highlight the program in the Right column and press ENTER.
- Obtain additional program details: Highlight the title of a program using the Menu Up/Down/Left/Right buttons and press the INFO. button.
- Exit from the Program Guide and return to normal viewing mode: Press Blue button (FF) or the EXIT button.

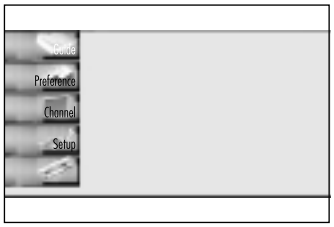
NOTES

You can also view information about channels by pressing the GUIDE button on the remote control. (The EPG should be pre-set in Full Guide mode.) There might be a slight difference between the displayed program times and the real times, depending on the time information is transmitted by broadcasters. If you display EPG after selecting DTV (1080i, 720p, 480p) with the Resolution Select switch, no video is output through the Video Out jack or S-Video jack.
When "Search" is activated in Full Guide mode, it may take awhile.

Timer Recording

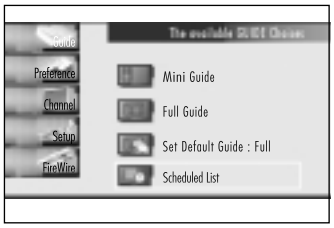
You can program your Set-Top Box to automatically record a particular channel at a certain time. First, connect a D-VHS device to your Set-Top Box with a Firewire cable.

1 Press the MENU button on the remote control.



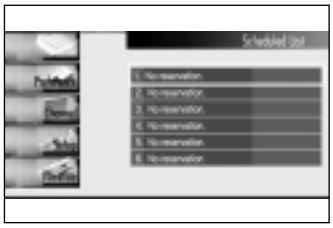
2 Use the Menu Up/Down buttons to highlight the Guide icon and press ENTER.

3 Use the Menu Up/Down buttons to highlight the Scheduled List icon. Press ENTER.

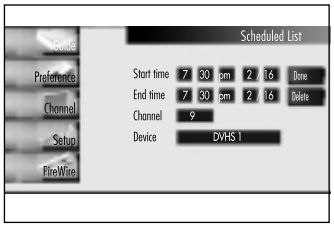


4 Highlight "No reservation" using the Menu Up/Down/Left/Right buttons and press ENTER. Set the start time, end time, date, channel and device you want using the Menu Up/Down buttons and ENTER button.

If you want to change settings, select the recorded program you want from the scheduled list using the Menu Up/Down buttons and press ENTER.



5 The Set-Top Box will automatically start recording the program listed in the D-VHS device at the time the program is to start recording. To stop timer recording, press the Power button on the remote control. During timer recording, other remote control buttons will not operate.



NOTES

- *During timer recording, four different error messages may appear on the screen as below.*
  - *Check start time: Appears when the recording time is not set one minute later than the current time. It takes about one minute to be ready for timer recording.*
  - *Invalid schedule time: Appears when the recording time is wrong, i.e., when the end time is not later than the start time.*
  - *Reserve time conflict!: Appears when recoding times are duplicated.*
  - *Check recordable device!: Appears when there is no device connected with a FireWire cable.*
- *To delete error messages, first recall the scheduled list using the BACK, ENTER, and MENU buttons on the remote control and set timer recording programs again.*
- *The Timer Recording feature operates only when a D-VHS device is connected.*
- *You can set up to six programs with timer recording.*
  The recording time can range from the present time to six months and may depend on the broadcaster's conditions.
- *The Set-Top Box should be turned off at least thirty seconds before the recording time. A warning message, "You have a reservation" will appear on the screen three minutes before the recording time.*
- *The recording mode will be automatically set in the D-VHS device. When an analog program is recorded, the mode will be set to "standard."*

Controlling FireWire Devices

FireWire is a digital serial interface that allows devices equipped with a FireWire connector to exchange digital video signals, digital audio signals, and device control signals bi-directionally over a single cable.
Before controlling FireWire devices, connect a FireWire device to the Set-Top Box with a FireWire cable.

1 Press the MENU button on the remote control.

2 Use the Menu Up/Down buttons to highlight the FireWire icon and press ENTER.

3 D-VHS devices that can be controlled by a FireWire control panel will be displayed in the order of connection.

4 Use the Menu Up/Down buttons to highlight the device you want and press ENTER. The display window on the screen shows the device you selected, manufacturer, model name, operation state (STOP, RECORD, PAUSE, etc.) and time. Use the Menu Up/Down/Left/Right buttons and ENTER button to activate each operation state.

PLAY:	Stops the current broadcasting program and starts playing the D-VHS device.
STOP:	Returns to normal viewing.
RECORD:	Records the current broadcasting program in the D-VHS device. You can't switch channels until the record ing is stopped. (During recording, you can only finish recording by operating STOP on the FireWire control panel or the STOP button of the D-VHS device. The remote control buttons of the Set-Top Box don't operate.)

5 Using the Menu Up/Down buttons, highlight Go Back to return to the previous menu or Exit to finish the FireWire function.

6 Once a particular device has been selected from the list, you can operate it using its remote control buttons or front panel controls (same as you can operate it with the FireWire control panel).

NOTES

- *You can also set the FireWire function by pressing the FireWire button on the remote control.*
- *"D-VHS" is a digital audio and video format. D-VHS recorders record digital video signals digitally and allow you to replay the program with its original quality.*
- *The FireWire control panel disappears 30 seconds after the last button is pressed. To re-activate the FireWire device, press the FireWire button on the remote control and select an appropriate device.*
- *If your FireWire device doesn't operate properly, try turning it and the Set-Top Box off, then on again.*
- *If you rewind or fast forward the D-VHS device during playback, the screen might show broken images.*

Programming the Remote Control for Other Components

The remote control has been pre-programmed to operate your Set-Top Box.
However, you can program the remote control to operate other components, such as a cable TV, a VCR, a DVD player, etc. (even though they are made by different manufacturers).

1 Press the appropriate button among the Component Selection buttons to activate another component (STB, TV, VCR, CATV, DVD).
For example, if you want to program the remote control to operate your VCR, press the VCR button on the remote control.

2 Press the SET button on the remote control. The LED for the active component will light for 30 seconds.

Use the number buttons to enter the code by manufacturer. (See tables on pages 4.20~4.22)

Each code must be three digits long.
For example, to enter the code “6,” press 0, 0, and 6.
To enter the code “76,” press 0, 7, and 6.

See the remote control code tables on the following pages to find the appropriate code for your particular component. If more than one number is listed, try each one separately until you find the one that works.

VCR Remote Control Codes

Admiral	15 ,88	MTC	16,24
Aiwa	24	Multitech	16,24,40,41
Akai	26,31,32	NEC	11,23,25,39,55,70,73
Audio Dynamics	22,25	Optimus	15
Bell & Howell	11	Panasonic	17,62,84,86
Broksonic	19	Pentax	14,44
Candle	16,18,22,54,55,61	Pentex Research+	55
Canon	17,62	Philco	17,38,62,65
Citizen	16,18,22,54,55,61	Philips	17
Colortyme	23	Pioneer	14,25,42,59
Craig	16,21	Portland	53,54,61
Curtis-Mathes	9,16,17,23,24,55,62,73,76	Proscan	9
Daewoo	3,4,5,6,7,8,22,54,85	Quartz	11
DB	23,25	Quasar	17,53
Dimensia	9	Radio Shack/Realistic	11,15,17,18,21,24,28,36,52,62
Dynatech	24	RCA	9,14,16,17,37,44,46,63,78
Electrohome	36	Samsung	0,16,22,31,41,51
Emerson	17,18,19,22,24,29,32,36,43	Sansui	25
	50,51,56,58,66,71,74,76,77,79	Sanyo	11,21
Fisher	11,21,27,28,52,57,67	Scott	22,50,58,77
Funai	24	Sears	11,14,18,21,27,28,44,52,57
General Electric	9,16,17,41,62	Sharp	15,36,48,54
Go Video	16	Shintom	26,35,40,64
Goldstar	18,23,55,69	Signature	24
Harman Kardon	23	Sony	26,35,47
Hitachi	14,24,44,45	Sylvania	17,24,38,62,65
Instant Replay	17	Symphonic	24
JC Penney	11,14,16,17,23,25,39,44,60,62	Tandy	11,24
JCL	11,17,23,25,39,55	Tatung	39
Kenwood	11,23,25,39,55	Teac	24,39,78
KLH	82	Technics	17
LG	1,2,7	Teknika	17,18,24,30
Lloyd	24	TMK	76
Logik	40	Toshiba	14,22,28,57,58
LXI	24	Toshiko	18
Magnavox	17,38,62,65	Totevision	16,18
Marantz	11,17,23,25,38,39,55,70		

CATV Remote Control Codes

Anvision	15,16	Pioneer	26,28,52
Cable Star	15,16	Randtek	15,16
DaeHan	5	RCA	8,35,74
DaeRyung	3	Regal	11,20,21
Dongkuk	4	Regency	10,41
Eagle	15,16	SAEWOO	7
Eastern International	20	Samsung	0,11,30,52,71,72
General Instrument	54	Signature	54
GI	12,13,23,31,32,33,38,44,75,76,77	Spruce	35
Hamlim	11,12,20,21,42,56	Starcom	54
Hitachi	45,51,54	Stargate2000	66
Jerrold	12,13,23,31,32,33,38,44,54,70,73	sylvania	19,67
LG	6	TaePyungYang	2
Macom	45,51	Texscan	19,67
Magnavox	15,16,27,29,34,36,37,40,41,48,49	Tocom	25,29,57,58,63
Nawoo	1	Unika	39,40,49
NSC	17	Universal	59,60
Oak	24,46	Viewstar	15,16,27,29,34,36,37,40,41,48,49
Osk Sigma	24	Warner Amex	52
Panasonic	11,35,47,69	Zenith	22,50,65,69
Philips	15,16,27,29,34,36,37,40,41,48,49		

DVD Remote Control Codes

Philips	7	ProScan	8
Sony	4	RCA	8
Samsung	0	Toshiba	2
Panasonic	6	Sharp	5
LG	1	CurtisMathes	9
JVC	3		

TV Remote Control Codes

A-Mark	88, 37, 90	MTC	26, 15, 6, 49, 93, 20, 8, 75
Admiral	55	NEC	25, 75, 20, 8, 6, 5, 1, 1
Akai	20, 6	Nikei	50
Anam	37, 47, 64, 41, 50	Onking	50
Aoc	6, 37, 20, 56	Onwa	50
Bell & Howell	67	Optonica	69
Broksonic	68	Panasonic	64, 72, 58, 82
Candle	6, 12, 20, 46, 50	Penney	61, 6, 49, 66, 18, 90, 50, 77, 25
Centrion	45	Philco	1, 8, 88, 61, 6, 90, 50, 12, 98, 92, 100, 82, 20
Citizen	20, 46, 6, 50, 12, 90, 45, 9, 10	Philips	88, 1, 61, 6, 90, 12, 98, 92, 82, 20, 5, 57
Classic	50	Pioneer	65, 26
Concerto	6	Portland	88, 6, 90
Contec	50, 78, 83, 81	Proton	1, 31, 6, 90, 77, 78
Coronado	88, 90	Quasar	72, 58
Craig	7, 49, 50	Radio Shack	50, 92, 25, 90
Croslex	30	RCA	61, 6, 71, 66, 87, 20, 90, 1, 62
Crown	50	Realistic	8, 49, 50, 25
Curtis-Mathes	1, 6, 20, 90, 17, 31	Sampo	1, 20, 90, 6, 19, 26, 49
CXC	50	Samsung	88, 0, 61, 28, 44, 29, 81, 48, 49, 90, 92, 51
Daewoo	88, 1, 93, 31, 32, 33, 38, 52, 2, 3, 92, 34, 46, 50, 35, 36, 4, 5, 6, 8	Sanyo	89, 80, 62, 78, 13, 14
		Scott	1, 50, 19, 90, 6
Daytron	1, 6, 20	Sears	88, 61, 6, 8, 90, 91, 89, 80, 15, 19
Dynasty	50	Sharp	88, 90, 85, 24, 25, 69
Emerson	88, 1, 90, 50, 83, 19, 30, 81, 20, 6, 25, 55, 23, 36	Signature	84, 6, 114
Fisher	8, 80, 61, 15, 125	Sony	77, 74
Funai	50, 19, 69, 6	Soundesign	1, 50, 12, 6, 19
General Electric	1, 61, 72, 50, 58, 17, 18, 6, 49, 19, 90	Spectricon	37
Goldstar	88, 27, 1, 37, 10, 11, 42, 90, 39, 40, 92, 99	SSS	6, 50
Hitachi	88, 6, 90, 71, 77, 70, 21, 22, 23, 25	Sylvania	1, 61, 6, 12, 98, 92, 20, 100, 82
Infinity	82	Symphonic	2, 6, 90, 12, 20
JBL	82	Tatung	72, 69
JC Penney	91, 92, 17, 20	Techwood	6, 59
JVC	60, 16, 128, 129	Teknika	88, 46, 6, 90, 50, 12, 19, 94, 84
Kloss	92	Telefunken	96, 97
KMC	88, 90, 13	Telerent	84
KTV	88, 90, 50, 61, 20	TMK	1, 6, 90

Troubleshooting

If you have difficulty with your digital TV set-top receiver, there are several possibilities you should investigate before calling a service technician.

Problem	Possible Solution
Intermittent signal, or no signal at all.	Try another channel. Make sure the antenna is connected. If a powered antenna, turn the power boost on. You may also want to rotate the antenna for a stronger signal, using the tri-state LED indicator on the front of your tuner as a guide. Make sure D-VHS connections are correct. Check the resolution select switch to make sure an appropriate mode is selected.
Poor sound quality, or no sound.	Make sure audio connections are correct. Try another channel - sometimes broadcasters have problems with DTV audio encoding. Make sure the MUTE button on your TV is off. Try both analog and digital (coaxial, optical) audio connections.
No color, or wrong colors.	Make sure you have connected the DTV set-top receiver correctly to your DTV-ready or analog TV set. For a three-wire component connection, match the red, green, and blue cables from the set-top receiver to your TV.
Remote control doesn't work correctly.	Make sure you have fresh batteries installed the correct way in your remote. Also, select the correct remote command mode to DTV or STB.
The DTV set-top receiver won't turn on.	Make sure the receiver's power plug is installed and that the AC outlet is working. Check the batteries in the remote control to make sure they are fresh and installed correctly.

(continued...)

Problem	Possible Solution
The D-VHS device connected to the FireWire jack doesn't work correctly.	If you view a D-VHS tape with copy protection technology, and then a D-VHS tape without copy protection technology after viewing an analog TV program, the screen might turn black. In that case, stop the D-VHS device and re-play it. If you rewind the D-VHS device in order to move to the start portion of the tape during playback and re-play it, the D-VHS device might not work correctly. In that case, stop the D-VHS device and re-play it, or turn the power off and on again.

Care and Maintenance

With proper care, your Set-Top Box will give you many years of service.
Please follow these guidelines to get the maximum performance.

Placement

- Do not put the Set-Top Box near extremely hot, cold, humid or dusty places.
- Do not put the Set-Top Box near appliances that create magnetic fields.

Liquids

- Do not handle liquids near or on the Set-Top Box.

Cabinet

- Never open the cabinet or touch the parts inside.
- Wipe your Set-Top Box with a clean, dry cloth. Never use water, cleaning fluids, wax, or chemicals.
- Do not put heavy objects on top of the cabinet.

Temperature

- If your Set-Top Box is suddenly moved from a cold to a warm place, unplug the power cord for at least two hours so that moisture that may have formed inside the unit can dry completely.

Specifications

General Specifications

Broadcasting standard	DTV (ATSC), Analog TV (NTSC)
Power requirement	AC 120 V, 50/60Hz
Power consumption	40 watts / In standby: 2 watts
Dimensions (W x D x H)	16.93 X 12.6 X 3.35 (inches)
Weight	7.8 lbs

RF Specification

Tuning system type	F/S
Band coverage	VHF 2 ~ 13 UHF 14 ~ 69 CATV 1~125
Antenna	75-ohm external antenna terminal for VHF/UHF
Number of inputs/outputs	1 V/UHF IN (75ohm), 1 CATV IN (75ohm) 1 DTV Out Component ($YP_B P_R$) 1 DTV Out (RGB) 2 A/V In,1A/V Out 2 S-Video In,1 S-Video Out Component Video In (480i/480P) DVI Out (25-pin) 2 IEEE 1394 In/Out Dolby Digital Out (Optical) Dolby Digital Out (Coaxial) RS232C (9-pin) 2 Analog Audio In/Out (Lt/Rt) Resolution Select Switch (1080i, 720p, 480p, 480i) DTV Out Select Switch (YP_BP_R/RGB,DVI)